

THE Soybean Digest

REG. U. S. PAT. OFF.

GEO. M. STRAYER, Editor

KENT PELLETT, Managing Editor

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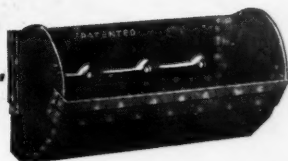
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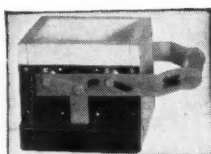
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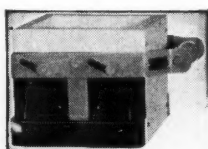
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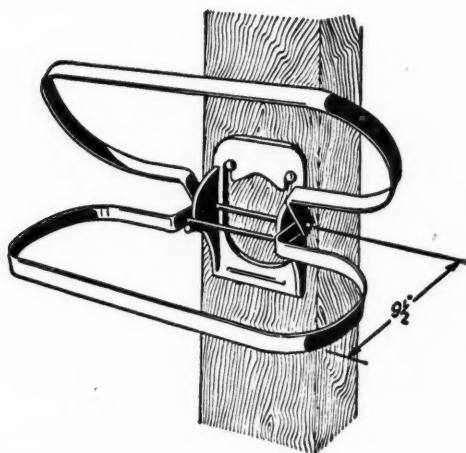
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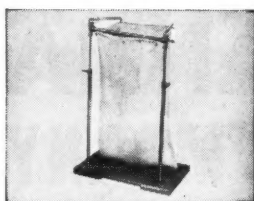
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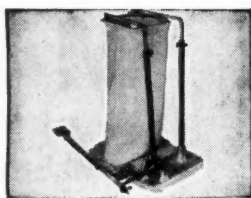
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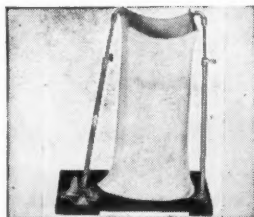
No. 114—This bag holder has won great acceptance in the grain and seed trades because it is simple to use and sacks will not fall off while being used. Constructed mainly of soft steel, with malleable iron jaws. Adjusts to any height or width of sack. Releases by a simple movement of the spring controlling the arm. Along the front of the frame is placed a bar for holding a shovel or a basket for grading at time bag is being filled. \$9.50 each.



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No. 391—Here is another type bag holder with jaws that grip the bag firmly at all times eliminating any danger of slipping. The jaws are square and have a small outward projection at each corner to hold the bag open in a rectangular position. The malleable iron jaws, wrought iron pipe standards, and steel

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SOYBEAN DIGEST

EDITOR'S DESK

Serious Loss of Protein During the last 10-year period the manufacturer of mixed feeds has watched the protein content of corn dwindle from 9.5 percent or higher to the present value of 8.5 percent or less. This is according to a recent report to the hybrid seed corn division of the American Seed Trade Association by Dr. J. E. Hunter, director of research for Allied Mills, Inc. The above figures are based on hundreds of cars of corn adjusted to a 15 percent moisture basis.

This lowered protein content of corn is of grave concern to the farmer and the feeder. The lowered protein content of corn means that additional tonnages of protein concentrates must be used to bring livestock rations up to their former levels—which were entirely inadequate in light of correct livestock feeding practices for most economical gains.

According to Dr. Hunter's estimates, approximately 80 percent of the 1946 crop of corn will be fed, totaling 2,700,000,000 bushels going to livestock and poultry. To raise the protein content of this quantity of corn by only .5 percent would require 1,134,000 tons of soybean oil meal. To raise the protein of corn to 9.5 percent by supplementation would require 2,268,000 tons of soybean oil meal.

Total production of soybean oil meal in the United States for the year ending September 30, 1946, was 3,822,600 tons. If 2,268,000 tons is needed to bring corn back to former protein levels, then approximately 60 percent of the total production is used in that capacity.

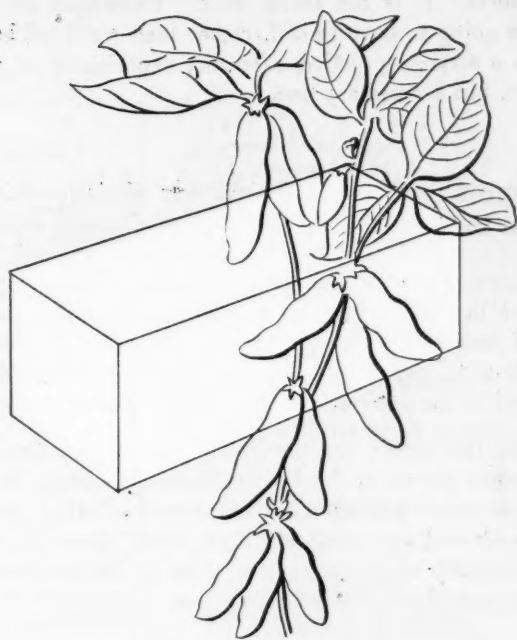
With production of linseed meal down from former levels, with cottonseed meal supplies moving downward each year, with livestock population at record levels, should there be any question about continued demand for soybean oil meal through the coming years? Not to increase the average protein content of rations, but to maintain it?

Downward trend of protein content of corn is very significant. It has not yet been generally recognized but will become more significant through a period of years.

Buyers' Market In spite of the above information, farmers have been reluctant to purchase soybean oil meal at current prices. Reflecting that hesitancy, the meal market sagged in December. Partial explanations lies in the open winter prevailing early; in the uncertainty of prices during the next few months; the reluctance to buy ahead.

On a dollars and cents basis, soybean oil meal at present prices is far more a bargain product than it was during the war period when OPA prices applied. When compared to livestock prices, it is now a cheaper product. It will give greater dollar returns when fed today than when fed during the war period.

But farmers are not buying it. The industry has a



Margarine and Soybeans have a lot in common

We depend on soybeans for a big share of the fine food oils that go into the making of modern margarine . . . buy more soybean oil than any other industry except one.

That gives us a lot in common—and gives you a "business interest" in margarine.

We're reminding people how good margarine is with color-page ads in Life, American Weekly and Parents' Magazine—to maintain and increase the demand for this good food. Watch for them and pass the word along.

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job in pointing out price relationships—in selling its products. It is not being done. Processors are once more going to have to sell, rather than ward off buyers. It is a strange practice, after the experiences of recent years, but a necessary one.

Support Ends in '48 By declaring the war officially ended on December 31 President Truman shortened by one full year the period of anticipated support prices on the soybean crop. Price supports under the Steagall amendment now will apply on the 1947 and 1948 crops of beans. Support for 1947, according to present figures, will remain at \$2.04 per bushel to the grower, the same as during the past year.

By this action the president hastened the day when soybeans grown in the United States will begin to compete on world markets. With our mechanical production methods and our relatively high yields, there should be no difficulty in capturing our share of the markets formerly supplied by Asiatic countries.

To Plan for 1947 Entering the 1947 year, there are many problems confronting the soybean industry. Recognizing that fact, the board of directors of the American Soybean Association is to meet in Chicago on January 20. The day following that meeting, representatives from the Board will meet with repres-

entatives from the margarine industry. Report on the meetings will be carried in the February issue.

One Way to Bolster Price Export permits on soybean oil meal are still not being issued, and export permits on beans are being issued in only very limited quantities. World prices are now at much higher levels than domestic quotations. Edible oil has been traded on world markets, for 1947 delivery, as high as 35 cents per pound. Meal has been selling at prices over \$100 per ton, basis Atlantic ports. Yet domestic meal has been selling for only slightly above \$70, Decatur basis. Soybean oil is selling for about 25 cents.

With the above figures in mind, recommendation has been made that export permits on modest quantities of soybean oil meal or soybeans be granted at the present time. Such permits can be allowed without short-changing the domestic feeder. They would materially bolster the domestic markets, at the same time allowing us an entering wedge in the world markets which we hope to supply within the next few years. The Secretary of Agriculture has been asked by the American Soybean Association to give consideration to such exports immediately, so that any effects upon prices may be discerned before planting time.

If 1947 soybean acreage goals are to be met, there must be financial encouragement before planting season. Comparative returns must be favorable to soybeans. Modest exportations would achieve that goal.

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GROWERS

Flaming Beans

One season's trial with flame cultivation of corn and soybeans at the Delta Branch Experiment Station, Stoneville, Miss., indicates the possibility of eventual wide use of this method of cultivation on the two crops.

So far flaming has been largely limited to cane and cotton. Harold Severson reports on the 1946 season's trials with flaming in the December issue of *Southern Agriculturist*.

A 20-acre field of corn at the Station was exceptionally weedy. Under the direction of P. W. Gull, the station agronomist, it was flamed four times—and produced 70 bushels of corn to the acre.

A small field of Ogden soybeans was flamed eight times while the plants were between the height of 5 and 24 inches. It went 35 bushels to the acre.

The men at the station are not too definite about the use of flaming equipment on soybeans, however. "At the present time our work with soybeans is not conclusive enough to permit us to make a definite statement such as we are prepared to do with both cotton and corn," says William E. Meek, the Station's authority on farm machinery.

"We haven't sufficient evidence to say positively that soybeans can be flamed safely even at 10 inches high. Unlike corn, a soybean plant would be killed if flamed when it first emerges from the ground."

Price Suit

Right of soybean growers to collect the recent price rise following lifting of OPA ceilings on soybeans in October is being tested in a Storm Lake, Iowa, district court.

Five growers have filed suit against the Truesdale Cooperative Elevator Co., Storm Lake, in an attempt to recover the market rise between the time the beans were delivered to the elevator and attempted settlement.

The beans were delivered between October 3 and 17, according to the plaintiff's petition filed early in November. Ceilings were lifted October 17 by OPA. There was immediately a substantial rise in the soybean market.

Plaintiffs state they attempted to collect on October 18 and 21 at prices of \$3.00 and \$3.18 then prevailing, according to *Storm Lake Pilot-Tribune*. They allege the defendant elevator refused to pay the price asked or to redeliver the soybeans to the plaintiff.

The plaintiffs, John Luft, Bertha Whitney, Ed and George Meyer and L. Pattat, seek to recover \$3,082.53 on 1,297 bushels of soybeans.

Lincoln Bean

Considerable interest in the Lincoln soybean in Mississippi County, Ark., is reported

by County Agent Keith J. Bilbrey. Lincoln was grown in the county for the first time in 1946.

Five farmers who grew and harvested a crop reported yields of between 26 to 32 bushels per acre. Combining was done between August 20 and September 6, several weeks ahead of Ralsoy and Ogden, the well established varieties in Mississippi County.

Farmers want a good, early maturing variety so they can spread their combining over a longer period. Some want a bean they can harvest in time to sow alfalfa on the same land in the fall. And they often need a variety they can plant late and still mature a good crop by frost, Bilbrey explains.

International Winner

H. L. Stiegelmeier, Normal, Ill., farmer won the title of Soybean King at the International Grain and Hay Show in Chicago December 1.

Stiegelmeier has been raising soybeans for 20 years on 40 acres of his 320-acre farm. This was his first exposition victory, though he had won the soybean championship at the University of Illinois in 1944.

Stiegelmeier will hold for 1 year the soybean trophy offered by the Union Stock



—Photo Chicago Tribune
H. L. STIEGELMEIER

Yard and Transit Co. of Chicago. He won the Philip W. Pillsbury trophy outright.

Reserve championship honors went to Robert H. Peck, River Canard, Ont., Canada.

First place winners of soybean exhibits at the show, which was held in conjunction with the International Livestock Show, include:

Regions 1 and 2, Peck; regions 3 and 7, R. A. Osborn, Culver, Ind.; regions 4 and 8, Stiegelmeier; regions 5 and 6, McGuire Brothers, Wood River, Nebr.

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LETTERS TO THE EDITOR

Need Education

To the Editor:

That farmers have been maneuvered into an untenable position by the fluctuating soybean market is undeniable.

The large processors tell me that this entire situation has been caused by failure to move meal in sufficient quantities to justify current prices.

Now I suggest that the soybean industry—growers and processors, combine immediately under the leadership of the *Soybean Digest* in an educational program designed to make every soybean grower a booster of soybean meal. Soybean growers cannot expect to get \$2.50 or \$3.00 for soybeans and expect the meal to be \$40.00 a ton.

After talking to many farmers and elevator operators, I am convinced that a campaign which would educate the soybean growers as to the high value of soybean meal would bring the desired results. It would be my idea to have the large processors print circulars which could be handed out at the elevators to everyone who brings in beans or mailed out to everybody who has brought in beans, outlining the absolute need for co-operation between growers and processors. I further believe that a campaign through the local country newspapers would help.

The point is that when beans went up, meal went up and when meal went up the soybean growers, as well as people who did not grow soybeans, quit buying meal when as a matter of cold logic, it is more economical to feed soybean meal to present priced hogs than it was to feed \$50.00 meal to \$15.00

On Gumbo

That soybeans can be a money crop on land unsuitable for corn was proved in 1946 by A. G. Walker, of Gentry County, Mo.

Mr. Walker seeded 15½ acres of "gumbo" land to Lincoln beans. He got a yield of more than 20 bushels an acre.

hogs. However, I will let the experts write the ads.—H. I. Cohn, Valley Farms Co., Carrollton, Ill.

High Yields

To the Editor:

The *Soybean Digest* is a fine publication. I keep every copy and often refer to them.

We believe it a conservative guess that Mississippi County, Ark., produced 3 million bushels of soybeans in 1946. Are there many other counties in the Nation that produce as many beans?

I have reliable variety yields from 21 farmers in this county for 1946. Ogdens averaged 39 bushels per acre as compared to Ralsons at 34.1. The best yield we have had is 56 bushels of Ogdens per acre. What is supposed to be the top national yield?

—Keith J. Bilbrey, county agent, Mississippi County, Blytheville, Ark.

Not many counties in the U. S. or anywhere else produce over 3 million bushels annually. Champaign County, Ill., long considered the nation's leading soybean county, produced 3,960,000 bushels in 1945. Christian County, Ill., produced 3,766,400. We know of no other county that went over the 3 million bushel mark in 1945. Official information on production by counties for 1946 is not yet available.

For top per acre yield see report of the Indiana yield contest carried in this issue. We believe 55 bushels per acre is the record for any yield contest to date.—Editor.

OTHER PUBLICATIONS

The Butter-Margarine War Is on Again

No sooner had the election news quieted down than manufacturers of margarine started mapping a program to convince the new republican congress that the butter-substitute interests have been the victims of discrimination. Twenty-five states have restrictive legislation against margarine.

It would be almost suicide in this dairy state, and particularly in Bremer County, the "Dairy Spot of Iowa," to argue in favor of the margarine interests. But it seems to us that legislation in some states does border on the unfair.

For instance, North Carolina forbids the use of margarine in public eating places. There are several other restrictions in other states.

It seems to us that so long as a product meets pure food specifications, is legally manufactured and accurately labeled, they should have the right to do business. Any other restrictions should be on the same basis for all products of a class. And as far as we're concerned, butter wouldn't have to worry about the competition.—*Tripoli (Iowa) Leader.*

CASE HISTORY No. 11

One in a series of factual experiences of a group of American manufacturers with Multi-wall Paper Bags.

COST COMPARISON (Per Ton)

		100-lb. Burlap Bags	Paper Bags
Container cost	\$2.00	\$.98	
Labor cost	.56	.18	
Total container and labor cost	\$2.56	\$1.16	
Saving per ton, paper over fabric			\$1.40

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CHEMICALS	FOOD
FEEDSTUFFS	MISCELLANEOUS

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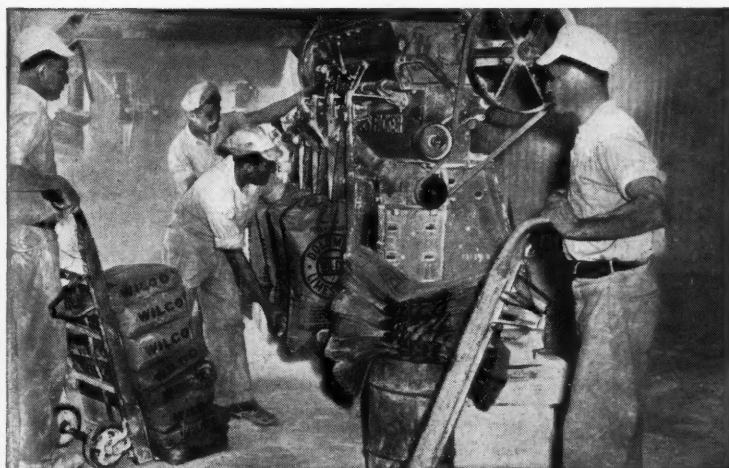
Surveying its packaging costs with a critical eye, a limestone mining company dug deeper into the facts and uncovered a rich "find"—considerably lower packaging costs and a better container for its product.

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Left: The St. Regis 107-FC packer, which simultaneously fills and weighs 100-lb. multiwall paper valve bags.
Right: Four filling tubes permit uninterrupted packing.



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MINNESOTA BEAN FEVER



—Photo Courtesy Clara City Herald
Elevator row in Clara City, Minn., where the big 1946 crop was handled.

CLARA CITY, Minn., doesn't believe in hiding its light under a bushel. An enterprising little town of 1,000 in eastern Chippewa County, it claims, among other things, the title of soybean capital of Minnesota.

Editor Emil A. Swanson of the *Clara City Herald* staked out the claim in his November 15, 1945 issue. Quoting Swanson:

"Soybeans are no longer a minor crop in this community.

"The 125,000 bushels of soybeans shipped from the Clara City community this season brings this farm product into the major crop class, and gives the territory the distinction of becoming the soybean center of the state. Commission firms state that more beans have come from this community than any other center of like size in the state.

"According to reports from four elevator managers here soybean acreage will be doubled next season."

The prediction was substantially correct. It is estimated that the six townships of which Clara City is the shopping center harvested 300,000 bushels of soybeans in 1946. An estimated 14,256 acres of soybeans were grown, averaging 21 bushels per acre. The crop returned a cool million dollars to the farmers in the six townships!

Such a production has come about almost overnight. Six years ago soys were not even listed in crop production records in Chippewa County. In 1941—Pearl Harbor year—a total of 500 acres were grown in the whole county.

Vernon "Scoop" Welch, Chippewa County agent, says since the "timid introduction" of soybeans 7 years ago, they have found a cordial welcome on seven of 10 farms in the county.

Farmers began growing the Mukden and Manchu varieties solely for hay. Now earlier varieties which are high yielders and

adapted to combining are being grown, although considerable soybean hay is still fed.

Editor Swanson reports: "We've even got a theme song lined up for Clara City—'Oh soy can you see.'"

Plans are being discussed for an annual Bean Day as a fitting event for the state's soybean capital.

But what has been happening in Chippewa County is only typical of all Minnesota south of Minneapolis and St. Paul.

Freeborn County's soybean harvest was one-half million bushels and brought \$1,500,000 to its farmers, reports Geo. W. Kelley, farm editor for the *Albert Lea Evening Tribune*.

Most southern Minnesota counties showed substantial increases. Handling facilities were taxed very heavily by the unprecedented 1946 crop.

MINNESOTA SNOWBALL

Soybean acreage in Minnesota the past few years has been snowballing at a rate unequalled by any other state. In 1941 only 80,000 acres were grown for beans in the state. Total bushelage was only 1.2 million.

Two years later the acreage was 246,000. By 1946 it had reached 610,000.

This past year 10.7 million bushels of soybeans were harvested—nine times the production of 5 years ago!

For the first time soybean production exceeded that of its sister oilseed, flax, which is one of Minnesota's oldest cultivated crops.

What are the reasons for such an increase? Or to put the question another way: why did the soybean crop assume importance in Minnesota later than in other leading soybean states?

The same inducement of a good cash price for a crop that could be sold direct from the combine to the elevator has exist-

ed in Minnesota as elsewhere. But when the war began and the government asked for more oilseed acres, soybeans were not so well established in southern Minnesota as they were further south. A nucleus of a soybean industry had not developed as it had in Iowa, Illinois and elsewhere.

Short season varieties of high yield adapted to combining had been lacking. Only now is sufficient seed of a number of early maturing varieties becoming available for planting Minnesota acres.

But a number of factors have hurried along the development of the crop the last few years. Peculiar weather conditions have been hard on corn, oats and flax, but have operated in favor of soybeans.

Minnesota farmers discovered during the drought years in the 30's that soybeans would grow under conditions that wilted corn. And in the recent cold wet seasons they learned further that soybeans will grow on wet land where corn can't take it.

R. E. Hodgson, superintendent of the Southeast Experiment Station at Waseca, tells of planting soybeans when the horses pulling the planter went hock deep in the mud and it was necessary to leave the tractor in the shed. "The 25 bushels per acre we harvested seemed more than we deserved," he observes.

ADVANTAGE TO SOYBEANS

Much of the corn raised the past 2 years has been high in moisture content, a disappointment to growers. "I look for soybeans next year to cut into corn acreage," says John W. Evans, ASA director from Minnesota, at Montevideo. "Farmers are tired of this wet corn which they cannot crib."

In the southwest area where soybeans and flax overlap, soybeans have had the advantage recently. Yields of soys have been

considerably higher and returns have been better.

Flax yields were very low in some localities in 1943 and 1944. Wet weather delayed planting and caused a sharp reduction in flax plantings. When the season got too late for flax or oats, corn or soybeans went into the ground.

A flax and soybean survey of nine southwestern counties has been made by Hugh A. Johnson, agricultural economist of the Bureau of Agricultural Economics. He found that 42 farmers visited had decreased flax plantings by 47 percent on an average in 1944 and 1945. They had increased soybean acreage 38 and 46 percent for the same years.

WEEDY FIELDS

One trouble has been the increasing weediness of flax fields during the recent adverse seasons. Weeds are still green at harvest time and hamper the work of binder or combine. A volume of green weeds in flax makes combining an impossibility. The same problem does not occur with soybeans since the weeds are dead before they are combined.

Many southern Minnesota farmers are growing soybeans because they find them effective in weed control. Says Ralph H. Crim, extension specialist for the University of Minnesota: "Experiment station trials and farm practice shows that weed infested land can be worked one or more times to kill weeds before planting beans. Soybeans with good management have been an excellent crop to destroy weeds."

But both soybeans and flax have a place in south Minnesota farming. Flax is better than oats as a nurse crop for alfalfa and clover as it shades the plants less. The need for seedings of grass might increase the flax acreage of some localities irrespective of other considerations. On the other hand, farmers in the same sections will grow soybeans in preference to leaving the land idle in wet seasons. Flax requires early planting.

IMPROVE SOIL TEXTURE

Farmers are learning that soys improve the texture of many Minnesota soils, often resulting in higher yields of the crops following. Beans loosen heavy clay soils which tend to bake, and also the wet mucky soils. Soybean roots and combined straw tend to mellow such land. The introduction of soybeans into the rotation thus increases returns from the whole rotation. This factor is being more and more appreciated.

Limited acreages are double cropped. Peas for the canning factory are harvested as late as July 5. Then early soybeans are grown for grain or a later variety for hay.

Thus Minnesota farmers are learning to look on soys as a highly adaptable crop



—Photo Courtesy Albert Lea Evening Tribune
Arthur Drescher of Conger, Minn., combining soybeans. Minnesota farmers are still short of harvesting equipment.

Minnesota farmers awoke to the value of soybeans during the drouth years of the thirties when soys often stood as green oases in what were otherwise deserts of brown fields blasted by hot winds. In the forties they have become even more valuable in solving wet season problems. Soys go into the ground when planting season becomes too late for other crops. Minnesotans say they help to loosen heavy, wet soils. They are useful in weed control.

Assuming that the price remains good, larger acreages will be grown as seed of adapted early varieties and more mechanical equipment become available.

John A. Nelson, Maynard, Minn., feeds soybean hay to his white-faced steers and his registered beef type Shorthorns (in background). Soybeans were introduced into Minnesota as a hay and forage crop and many farmers still feed them to livestock.



that can be grown under a wide variety of conditions, even on soils that have been hitherto unproductive. But perhaps they are carrying this too far, making a frequent mistake of beginners with soys.

Says August J. Lipetzky, Springfield, Minn.: "Many farmers think they can raise beans on any old corner of their farm where other crops have failed. Also they feel that not a great deal of cultivation is needed. They are mistaken. Soybeans require as good a soil as corn or any other crop. They should be cared for as well or even better than corn. I always aim to cultivate my fields four or five times." Mr. Lipetzky has discontinued raising both corn and flax for the time being. He raised several hundred acres of beans in 1946.

Soybean oil meal has become increasingly popular as a protein supplement. This in turn has increased the interest in soys. During the period of feed shortages some farmers felt they could maintain control over their livestock feeding operations by raising soybeans, since they could feed them as hay or whole beans if needed.

Another factor in expansion of the crop was an extensive field program by one of the larger processors in the state a few years ago.

Many farmers have found that manpower requirements with soybeans are less than with almost any other crop. But more mechanical equipment is needed. This is especially true of combines.

The need also is felt for more early, adapted varieties with higher yields and oil content.

RECOMMENDED VARIETIES

The following are Crim's varietal recommendations:

Southern corn zone comprising most of southern three tiers of counties: Habaro, Manchu Wisconsin 606 and Manchu Wisconsin 3.

South central zone: Habaro, Manchu Wisconsin 606 and Ottawa Mandarin.

Central and north central zone: Kabott, Flambeau and Minsoy.

Ottawa Mandarin is of medium maturity and is quite satisfactory in the north central zone. There is much enthusiasm for this variety over much of the Minnesota soybean belt. It does well on all types of soil, does not shatter and yields well. It can be planted as late as June 20 in the southern part of the state and still produce a crop.

Habaro is still standard. It has never failed to make a crop in 28 successive years at the experiment station at Waseca. And so far no other variety has outyielded it over a period of years. But Habaro shatters and is low in oil content.

Kabott is a very early bean, a good yielder on rich soils. It can be harvested and out of the way before other beans are ripe.



This field of Richlands on the farm of Mrs. R. C. Matzke, Good Thunder, Minn., went 30 bushels to the acre.

Flambeau is another early bean with promise. From Wisconsin, it has undergone only limited tests in Minnesota so far.

Several processing plants operate primarily on soybeans in Minnesota. Archer-Daniels-Midland Co., of Minneapolis, long a flaxseed processor, was a pioneer in the region. Included among others are: Consumer's Soybean Mills, Lakeville; Mankato Soybean Products, Mankato; Hubbard Milling Co., Preston. Cargill, Inc., Minneapolis, will process beans later this year.

Western Soybean Mills, Sioux Falls, S. D., processes many beans from southwestern Minnesota. Others flow to northern Iowa processing mills, some of them located just across the state line.

What is the future of soys in Minnesota?

The general feeling is that the acreage trend will continue upward for the near future. Eighty-eight percent of farmers consulted in Johnson's survey said they intended to continue to grow the crop. Only 4 percent definitely planned to discontinue.

Says Johnson: "Soybeans apparently will produce an acceptable crop under more widely different conditions of soil, moisture, fertility and weeds than will most other crops that are common to the area. . . Under assumptions that the weather will be normal, that the demand for fats and oils will remain strong for several years, and that present price relationships will continue, it appears that . . . production of soybeans may be increased as more farmers learn their advantages."

It is undeniable that southern Minnesota farmers are now running a soybean fever. Whether it will continue when and if the price for soybeans goes down is another matter. The present good price undoubtedly is in large part the secret of their attractiveness.

WAY TO BEAT WET WEATHER

When frequent rains and drizzly days interrupted the harvesting of soybeans in Freeborn County, Minn., Peter Sleight of Hollandale acted on a hunch that solved the problem. He took his combine into the field at about midnight after light freezing had stiffened the pods. The combine shelled them perfectly.

By the middle of November, the beans which had been in danger of being snowed under all were harvested. Sleight was able to operate his combine well into each morning.

— s b d —

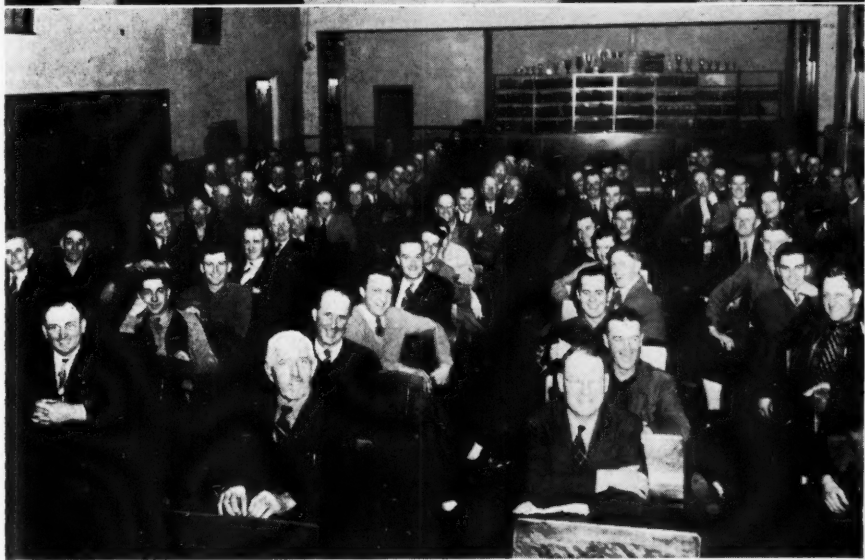
FIRE DESTROYED WEST TENNESSEE SOYA MILL

Fire raged through the West Tennessee Soya Mill, Tiptonville, Tenn., January 5, causing a damage of between \$850,000 and \$1,000,000. The mill is a major portion of Lake County's industry, and the fire virtually destroyed the big plant, which was partially covered by insurance. No one was injured.

The Soya mill's operations plant and three large warehouses filled with soybeans were completely destroyed, P. T. Pinckney, manager said. Three concrete storage tanks, also filled with soybeans were saved, he added.

The Soya Mill is owned by part of the same stockholders as the Lake County Oil Mill. The soybean plant is on the same property as the oil mill, but the oil mill was not damaged.

The West Tennessee Soya Mill, which handles the bulk of the soybean crop in that district each year, processes more than 20,000 tons a year and does a more than 2 million dollars annual business, Mr. Pinckney said. He added that the company plans to rebuild as soon as possible and that the employees will be given work at the Lake County Oil Mill and on the vast soybean acreage maintained by the mill itself.



—Photo Courtesy Prairie Farmer

At top, Chester Biddle of Biddle Farms and W. H. Shively, Remington High School vocational agriculture instructor, two of the promoters of the Remington Soybean Show, examine the trophies which were awarded to winners. At bottom, is a portion of the record crowd which attended the afternoon session.

THE REMINGTON *Soybean Show*

• Ninth annual Indiana show hits new high in interest.

A Purdue University freshman, Wayne Sommer of Remington, was the grand sweepstakes winner of the ninth annual Remington, Ind., Soybean Show December 17. Sommers, who was the sweepstakes winner also in 1945, now has two legs on the Farmers Cooperative Co. of Remington Trophy awarded each year to the winner of the show. If he succeeds in winning the trophy again in 1947 it will be his permanent property.

Attendance at the Remington Show topped all records with 400 at the afternoon



WAYNE SOMMER

meeting and 325 at the evening banquet.

The afternoon educational meeting was in charge of Bill Renshaw, Indiana editor of *Prairie Farmer*.

Speakers were: Dr. W. H. Goss, assistant to the director of the Northern Regional Laboratory, Peoria, Ill., on the subject, "The Effect of the War on German Soy-

bean Processing;" and Geo. M. Strayer, secretary of the American Soybean Association, Hudson, Iowa, on "The Future of Soybeans."

K. E. Beeson, extension agronomist of Purdue University, Lafayette, Ind., presided at the round table discussion following.

Other cup winners included:

Farmers division, Gaylord Sommers, Remington; certified seed Lincoln, Chauncey Wood, North Liberty; open class, Wayne Sommer, Remington.

Vocational agriculture division: Richland, Bill Lee, Rensselaer; Lincoln, Bill Lee, Rensselaer; junior agriculture division: all varieties, Larry Taylor, Remington.

Benton County 4-H, Dick Moore; Jasper County 4-H, Wayne Sommer, Remington (awarded to John Murray, reserve champion, Rensselaer, as Sommer was ineligible because of other winnings.)

TALK BY
DR. GOSS

Dr. Goss's talk concerned the 4½ months he spent in Europe in 1945 studying German oilseed processing under the joint chiefs of staff. He gathered much information while in Europe that has already proved of great value to the industry. Slides were shown of some of the German processing plants, depicting the very great damage sustained by them during the war.

"Basically, the future of the soybean industry will be determined by economics," Strayer told the afternoon audience. "Farmers will continue to grow beans if they can be paid on a basis at which it will be profitable for them to do so.

"Whether or not the processor can pay a profitable price to the farmer depends on the price he receives for two products, the oil and the meal. The return the processor receives from these two products less the processing cost will determine the price of soybeans.

"Approximately 40 percent of all vegetable oils produced in the United States during the past 3-year period has been soybean oil," Strayer said. "Contrary to the belief of most people, over two-thirds of this oil has gone into edible products, as shortenings, margarines and salad oils. During the war-years there have been Federal restrictions on the usage of soybean oil in other than the edible field.

"During the next 2-year period soybean oil will continue to be used largely in edible products because of the world and domestic shortages of fats and oils.

"Much research is being done on the industrial utilization of oil. After 1948 it will be necessary to look to paints, lacquers, varnishes, linoleums and oil cloths for part of the market for soybean oil. Fractionation seems to offer a lot of promise since it provides two products, each of which is better for certain usages than the whole soybean oil.

"Federal and state restrictions on produc-
(Continued on page 21)



Chocolate containing lecithin has a smooth, attractive finish and is relatively resistant to "bloom," a defect caused by the accumulation of fat or sugar on the surface of chocolate products.

LECITHIN

... Industry's Ally

• *Lecithin is not a cure-all for manufacturing problems, but products ranging from confectionery to cosmetics benefit from it. Reprinted from PROGRESS THRU RESEARCH, published by General Mills, Inc. The firm is adding a lecithin unit, soon to be in operation, to its Belmond, Iowa, processing plant.*

DURING the days of the traveling medicine show, bogus doctors claimed for their wares wonderful and all-inclusive powers. "Dr. Mayne's Magic Mixture" was guaranteed to grow hair on grandpa's billiard-ball dome, remove sister Susie's corn and stimulate father's waning appetite. "Dr. Wayne's Wonderful Water" would, extolled Dr. Wayne, accomplish miracles ranging from the cure of hives to the extermination of rodents.

As far as claims are concerned, the modern counterpart of yesteryear's "elixir" is lecithin, the fatty substance which has been suggested for nearly every known industrial use. However, unlike old-time patent medicines, lecithin actually will do most of the things attributed to it.

Originally obtained from brain tissue and later from egg yolk, lecithin for many years remained a laboratory curiosity. Since the cost of preparing the compound from known sources was extremely high, potential users found it much too expensive for their purposes, and there was little incentive for developing new applications.

RESEARCH FINDS USES

Today that picture has changed completely. The discovery of lecithin in vegetable materials, particularly soybeans, makes the substance available in reasonably large quantities at comparatively low cost, with the result that research is exploring the potentialities of lecithin and uncovering new uses at an amazing rate.

Lecithin belongs to a group of substances known to chemists as "phosphatides," compounds often described as occupying a position between fatty oils and proteins. By the technical man, these phosphatides are considered as triglycerides in which one fatty acid radical has been replaced with phosphoric acid. If the phosphoric acid is further esterified with choline, the resulting compound is lecithin; if it is esterified with colamine, the phosphatide is called cephalin. Ordinarily, "commercial soya lecithin" is a complex mixture of lecithin, cephalin and soybean oil, with the oil serving both as a carrier and as a preservative for the phosphatides.

The lecithin molecule itself has a split personality. While one side prefers fat, the other side is attracted by water, and it is this Jekyll and Hyde character which gives lecithin the unique colloidal and emulsifying properties that adapt it for uses in products ranging from confectionery to cosmetics.

TRIPLE ABILITIES

More specifically, lecithin is a versatile commercial product because it has "triple-threat" abilities. It's an anti-oxidant; it is surface active, and, consequently, will reduce surface and interfacial tensions.

For the benefit of the non-technical, here, in general, is how one authority describes these properties. Anti-oxidants are materials which either prevent or markedly retard the oxidation of substances to which they are added. How they do this is not fully known, but it is partially because they attract oxygen more readily than do the substances themselves. For example, lecithin will absorb oxygen more readily than will lard and consequently, will protect the lard when dispersed in it.

SURFACE TENSION

Surface tension governs the extent to which a liquid will expose its surface, the higher the tension the smaller the surface exposed. If mercury, an element with high surface tension, is poured from a flask, it will form into tiny balls rather than spread evenly, thereby presenting the smallest possible surface to the air. When this phenomenon occurs between two liquids or solids, it is called interfacial tension. As an example, oil in water, like mercury in air, forms globules and will not spread evenly throughout the mixture.

Because one part of its molecule has an affinity for fat and the other part for water, lecithin will reduce the interfacial tension of such a dispersion. When lecithinized oil contacts water, the phosphatide molecules, being surface active, group themselves on the surface of the fat globules, with their oil segments in the fat and their water portions in the surrounding water film. Thus, the oil and water are literally locked together with lecithin bonds which retard further separation, and it is this action which enables lecithin to stabilize emulsions.

Together, then, lecithin's dual personality and its triple abilities undoubtedly make it one of the world's most versatile industrial products.

USES OF LECITHIN

One of the first uses of lecithin was in the manufacture of oleomargarine. Scientists long have known that butter naturally contains small quantities of the phosphatide and that lecithin in refined vegetable oils is destroyed during processing. Some corrected this shortage by adding egg yolk to margarine, thereby developing properties similar to those of butter. Now lecithin does the same job more efficiently at less cost. Since the addition of 0.1 to 0.2 percent of lecithin to commercial margarine disperses water evenly throughout the fat, it markedly improves the frying and baking qualities of the final product. When the margarine is heated, the dispersed water evaporates, permitting the fat to brown and froth exactly like butter.

To the chocolate manufacturer, lecithin



As a wetting agent in paints, lecithin improves dispersion of pigments in the vehicle, retards pigment settling and produces an easily dispersed, soft pack when settling does occur.

offers means of improving quality and reducing costs. Chocolate containing from 0.1 to 0.3 percent of the phosphatide assumes a smooth attractive finish and is relatively resistant to "bloom," a defect caused by the accumulation of fat or sugar on the surface of the chocolate. Since lecithin causes fat to spread evenly, the amount of expensive cocoa butter in the mix may be reduced materially, which means both lower costs and better storage quality.

Bakery products, too, benefit from lecithin, for the addition of small quantities increases dough tolerance and baking volume, improves texture, and retards staling.

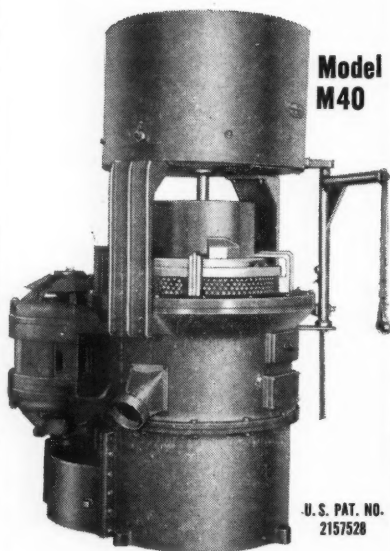
In the industrial field, the proved and suggested uses for lecithin are nearly limitless. As a wetting agent in paints and

printing inks, it improves dispersion of pigments in the vehicle, retards pigment settling and produces an easily dispersed, soft pack when settling does occur. At the same time, it does not retard drying or reduce gloss.

Because of its emulsifying power, lecithin increases the cleaning efficiency of soaps, and, according to some authorities, has an activating effect on the skin, which makes it a "natural" for use in beauty creams and salves.

In the manufacture of rubber products, soybean lecithin facilitates mixing and serves as a softener. The dye industry benefits from both lecithin's properties as an anti-oxidant and a wetting agent since its presence effects more even dyeing, greater

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So the list runs, steadily growing as science finds more uses for this amazing constituent of living cells. In addition to the myriad applications already mentioned, lecithin has been used in ice cream, textiles, leather, chemicals, powdered metals, anti-knock gasoline, anti-foaming agents, lubricating oils, wood impregnations, munitions, ceramics, insecticides, pharmaceuticals and many others.

OF DIETARY IMPORTANCE

Some nutritionists believe that lecithin is important in the diet. Since choline is a member of the vitamin B complex and lecithin plays a part in fat metabolism, their belief has a scientific basis and is supported by poultry-feeding tests at the Florida Agricultural Experiment Station, where lecithin-fed pullets consistently outlaid pullets on a lecithin and choline-free ration. However, the nutritional phase of lecithin's many-sided nature is still open to debate.

Although the process of removing the phosphatides from soybean oil itself is critical and requires careful control and highly-efficient equipment, its basic steps are relatively simple. Crude oil from the extraction plant is delecithinized by hydrating and passing the oil-emulsion mixture through centrifuges which separate the phosphatides from the oil. The phosphatide emulsion is then dried and subjected to special chemical treatment. When it has reached the proper consistency, the lecithin—a golden brown, viscous fluid consisting of true lecithin, cephalin and residual oil—is filled into drums for shipment.

Representing the latest in processing equipment, the lecithin unit will be housed in a modern building, in keeping with one of the world's most modern and interesting products.

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EPOCHAL MARGARINE DECISION MADE BY PENNSYLVANIA COURT

In a decision handed down in December, presiding Judge William M. Hargest of the Pennsylvania Court of Common Pleas of Dauphin County declared unconstitutional two of the state's statutes against the free sale and distribution of margarine. The victory is being hailed as the most significant one for margarine supporters in many years.

In the Pennsylvania case, the plaintiffs, T. J. Flynn of Lebanon, Pa., S. A. Yorty of Mechanicsburg, H. E. Barnhart, grocers; and E. C. Orris, a margarine wholesaler, sought to force the defendant, Miles Horst, secretary of agriculture of Pennsylvania, to remove the state license fees of \$500 a year on the wholesaler of margarine and \$100 a year on the retailer of margarine which the state imposed. This, contended the plaintiffs, constituted restraint of trade. Only one-seventh of Pennsylvania's 35,000 grocers could afford to take out the necessary licenses to sell margarine.

Willis F. Daniels, attorney for the plaintiffs, in a special statement said, "The Pennsylvania decision is the biggest state break margarine has ever had. The statute was of such long standing—it was enacted in 1899 and reenacted in 1901—that its final removal would seem to point to the effectiveness of aroused public opinion. During the dire shortage of fats and oils Pennsylvania has been denied its proper share of those available because of this artificial barrier.

"The action of the court here should show the way toward attacks on the Federal taxing statutes and those of other states conceived and kept on the books by the dairy bloc and which discriminate against the margarine industry."

Daniels said that there is no Pennsylvania legislation preventing the sale of colored margarine in the state, but the Federal law requiring the payment of \$480 annually by wholesalers of colored margarine and \$48 a year by the retailers of colored margarine would continue to be as effective in Pennsylvania as in other states in discouraging the sale of the colored product.

Because of the Federal law Pennsylvanians, Daniels explained, now able to buy margarine because of the state's action, will still have to color it at home as do the residents of most of the other states.

Following conference with plaintiff's attorneys, Pennsylvania state officials announced that applicants for retail and wholesale margarine licenses for 1947 will be granted them without charge.

In the event of a later reversal of the lower court's decision by the state supreme court, distributors operating under the free licenses will be required to pay the fees in full.



At Glidden's Cleveland meeting. Left, Dr. Percy L. Julian, research director of Glidden's soya products division, Chicago; right, W. J. O'Brien, chairman of the manufacturing, research and development committee, who presided at the meeting.

GLIDDEN HOLDS 3-DAY RESEARCH MEETING

The Glidden Co. held a 3-day conference of its major research and technical executives, the first such meeting in the company's history, at Cleveland, December 3-5.

Important new products and processes were described at the conference by 35 of the highly diversified company's experts. W. J. O'Brien, vice president and chairman of the Glidden Company's manufacturing, research and development committee presided at the sessions.

Among the research and technical directors in Cleveland for the conference were Dr. Percy L. Julian, soybean processing division; Dr. Benjamin Allan, chemical and pigment division; Dr. Joseph Bain, naval stores division; Dr. Louis Spielman, Durkee Famous Foods division; Joseph Drapeau, Metals Refining Co., division, and Edward Schulte, paint and varnish division.

Mr. O'Brien described the conference as, "designed to integrate as closely as possible the work of the company's 26 large laboratories."

These men have directed development of noted Glidden Co. products such as "Alpha Protein," major component of the foam which saved many blazing naval ships during the war; Spred-Luster, water mix oil enamel; and soya lecithin.

Dr. Julian, who is director of the Glidden Co.'s soybean laboratory in Chicago, was highly praised in a *Reader's Digest* article last August for his work with the soybean and its derivatives, and especially for developing the vital sex hormones, progesterone and testosterone, from soybeans.



Two of Glidden's research and technical executives who were at the December meeting: left, Edward Schulte, technical director of the paint and varnish division, Cleveland; and right, Dr. Louis Spielman, research director of Durkee Famous Foods division, Elmhurst, L. I.

Illinois Reports

The high yield of soybeans in Wayne County was 49 bushels from Chief variety reports L. B. Kimmel, farm adviser. This land was purchased in 1936 for \$38 per acre. The county average is near 23 bushels per acre.

The soybean crop in Macoupin County "proved to be the outstanding cash crop this year," observes O. O. Mowery, farm adviser. About 60 to 75 percent of the crop was marketed before the ceilings were lifted, and many farmers were unable to take advantage of the rise in price.

— s b d —

Soybean and cowpea hay harvested in Mississippi in 1944 constituted 28.5 percent of that state's hay acreage.

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SOYBEANS PRECEDING MEADOW

● Soybeans do not adversely affect clover and alfalfa stands following except on seriously run-down land, this Ohio project would indicate.

By C. J. WILLARD and
L. E. THATCHER.

Ohio Agricultural Experiment Station

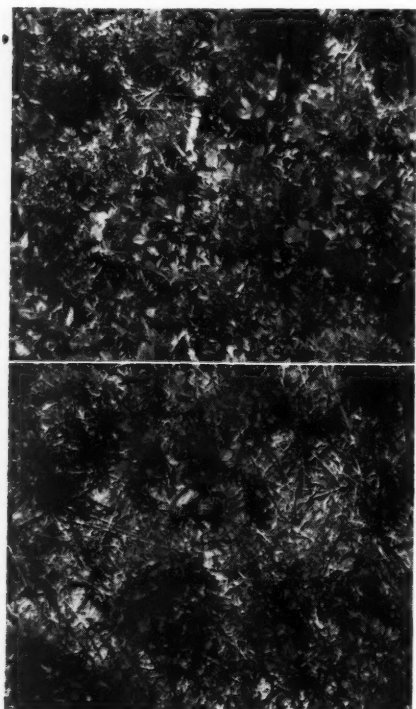
Farmers in the Cornbelt have complained for many years that they did not obtain as good seedings of alfalfa and red clover in small grains after soybeans as they did after corn. Experiences at the Ohio Agricultural Experiment Station did not generally bear this out.

For example, in the rotation experiment at Wooster, the yield of clover in the 3-year rotation soybeans-wheat-clover was 3,564 pounds per acre as a 19-year average. The yield in the corn-wheat-clover rotation for the same period was 3,723 pounds per acre, a non-significant difference.

Nevertheless, these reports were so insistent that a project was set up in 1943 to study the problem.

Corn and soybeans were sown in parallel strips on suitable block without

At top, alfalfa-clover mixture sown broadcast in wheat after unfertilized corn. At bottom, alfalfa-clover mixture sown broadcast in wheat after unfertilized soybeans. Taken at Holgate, Ohio, August 22, 1946.



fertilizer on either crop. After both crops were harvested, plots of wheat or oats were laid out at right angles to the corn and soybean strips so that each small grain plot crossed the corn strip and the soybean strip.

A mixture of alfalfa and red clover was sown in the small grain by a number of methods. Some plots of small grain were fertilized, some were left unfertilized. When the seedlings were made in winter wheat, additional plots were sown in which fertilizer was applied with the legume seed, both on fertilized and unfertilized wheat.

In 1944, 1945 and 1946, 13 comparisons of alfalfa clover mixtures sown in wheat as described above were made at five locations, and five comparisons similarly sown in oats at two locations. Data from 11 of these 18 comparisons are presented in the table. In the comparisons from which no data are reported, there were no differences in the stands obtained which were in any way related to the preceding crop, and for a variety of reasons no counts or other records were made on them.

While there is a definite tendency for the number of alfalfa and clover plants to be less following soybeans than corn, there is only one test in which the differences were obvious and clearly significant. This was at the Northwestern Experiment Farm in 1946, on the most seriously run-down land on the farm, or that has been used for these experiments. Here there were not only fewer plants following soybeans, but these fewer plants were smaller.

This and other observations suggest that the difficulty is due to nutrient deficiencies of some kind, but neither what nor why is clear.

RETURNS FROM HIGH FAT DAIRY RATION

Increasing the fat level of a dairy cattle ration will result in increased milk and butterfat yields, according to Dr. C. Y. Cannon of Iowa State College.

Dr. Cannon reported an experiment with grain rations containing three levels of fat at a feed school held at Ames in September. Range of the fat content was 4, 7 and 15 percent.

The fat was put into these dairy rations by cracked soybeans and soybean oil. In the high fat ration about half the fat was supplied by pouring soybean oil over the grain mixture.

"With each increase in level of fat we got an increase in yield of milk and butterfat," said Dr. Cannon. "We have deduced that beef cattle cannot eat as much fat as dairy cattle because these cattle cannot excrete fat, which is retained in their bodies, while dairy cattle in milk are giving off fat with their milk every day.

"The maximum amount of fat that can be fed a dairy cow has not been definitely established, though our theory is that a dairy cow can consume without any trouble as much fat as she eliminates in her milk."

— s b d —

FEEDSTUFFS PRICES ENCOURAGE FEEDING

Recent downward adjustments in prices of feedstuffs have brought about more favorable feed price ratios which will encourage heavy feeding once again in production of beef, pork, milk and eggs, Walter C. Berger, president of the American Feed Manufacturers Association, Chicago, said.

Berger cited the November feed situation report of the U. S. Department of Agriculture which showed that feeding ratios are considerably more favorable than the 20-year (1925-44) average.

"Though the price of feeds today is somewhat higher than in the same period of last year, it has declined considerably from the high peak of about 30 days ago," he said. "With present prices for beef, pork, milk and eggs, the feeding ratio now is conducive to heavy feeding profitably."

Effect of Corn and Soybeans as Crops to Precede Alfalfa and Clover
Summary of all treatments for successive years

Location and year	Plots* averaged No.	Plants per square yard			
		After corn		After soybeans	
		Alf. No.	Red cl. No.	Alf. No.	Red cl. No.
		Sown in wheat			
Columbus, 1945	55	23.4	46.5	18.9	46.3
Columbus, 1946	55	15.0	22.9	10.5	22.7
Northwestern Exp. Farm, 1945	18	24.3	60.0	22.0	54.8
Northwestern Exp. Farm, 1946	18	87.8	46.0	66.0	47.8
Southwestern Exp. Farm, 1945	18	38.8	194.0	30.7	166.0
Wooster, 1945	16	43.2	96.0	37.2	74.3
Average		38.8	77.6	30.9	68.7
Yield of hay, Columbus, 1946, lb.		4100		4200	
		Sown in oats			
Columbus, 1944	55	39.4	15.6	39.0	11.5
Columbus, 1945	55	25.3	25.3	19.8	28.1
Columbus, 1946	55	16.9	25.4	15.9	25.3
Northwestern Exp. Farm, 1945	14	24.3	28.2	24.4	28.5
Northwestern Exp. Farm, 1946	14	85.1	53.6	64.1	43.1
Average		38.2	29.6	32.6	27.3
Yield of hay, Columbus, 1946, lb.		3540		3720	

*3 or 6 counts of 1/6 square yard each were made at random in each plot to get each plot record.

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STRAYER

(Continued from Page 13)

tion and usage of margarine greatly hamper the margarine industry, now the second largest user of soybean oil in the U. S. One of the important jobs facing the producer at the present time is that of seeing that those Federal and state restrictions are removed.

"Under the present legislative setup it is necessary to take soybean oil carrying a golden yellow color, refine and bleach the color out of it, then hydrogenate and make it into margarine. The housewife is given a package of coloring with the margarine so she can color it back to the original golden yellow of soybean oil."

"Soybean oil meal during recent years has supplied 50-60 percent of all protein meal fed to livestock in the United States. It is no longer a substitute for other protein feeds but has become the standard by which other livestock and poultry are judged. Livestock feeders are interested in seeing soybean production continued on a high level so adequate supplies of protein feeds will be maintained.

"The extraction of protein from oil meal offers possibilities in such fields as whippings, meringues, paints, adhesives, paper coatings and textile sizings. Some increase may be expected in food and industrial usages of soybean oil meal. But livestock feeds will continue to offer the major market.

"In coming years there will be shifts in the areas of soybean production. The South will raise a greater proportion of soybeans than in the past. Diseases and insects will become an increasing factor. They will force growing soybeans as a part of a complete rotation. This will bring about wider areas of production, cut down the concentration of soybeans in small areas. The varietal development program of the U. S. Department of Agriculture offers promise of new and higher yielding varieties for the northern fringe of soybean production, also for the southern areas.

"If we will use soybean oil in our food products, in our paints, varnishes and other

surface coatings, if we feed soybean oil meal in the quantities we should for economical livestock gains, an increasing acreage of soybeans will be required during the next 10-year period.

"The price of meal and oil determine the price of soybeans. And the price of these products in turn is determined right back in the area where soybeans are produced, by the willingness of the farmer and city dweller to consume soybean products."

— s b d —

MISS ARKANSAS IN ST. LOUIS TOO



—Photo courtesy National Cotton Council and Northwestern Miller.

Becky McCall, who as "Miss Arkansas" won second place in the 1946 Miss America contest, models garments made from print bags. Becky was also queen of the national cotton picking contest held in her home town of Blytheville, Ark. Her connection with soybeans is admittedly slight. However, she WAS in St. Louis during the American Soybean Association convention. And our photographer DID suggest that some of the convention attendants might pose with her. The men were available—no wonder—but unfortunately Miss Arkansas wasn't, not at the right moment.

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When it comes to the development of new varieties of soybeans especially well adapted to Cornbelt conditions, we take off our hats to Dr. Clyde Melvin Woodworth of the University of Illinois College of Agriculture. Over half of the soybean acreage in Illinois and large acreages in other states are now growing varieties which have resulted from the breeding program directed by Dr. Woodworth. He developed the Illini, Chief, and Viking varieties and cooperated with the U. S. Department of Agriculture in the development of the Lincoln.

Dr. Woodworth is a quiet, unassuming and likeable gentleman whose hair has turned to silver during the 25 years since he wrote his thesis on the "Inheritance of Cotyledon, Seedcoat, Hilum and Pubescence Colors in Soybeans" in partial fulfillment of the requirements for the Ph.D. degree at the University of Wisconsin. During this period, in addition to actively promoting work in the breeding of hybrid corn and other farm crops, he has found time to prepare, as sole or joint author, 37 bulle-

tins, circulars or papers on breeding and genetics of various crops, particularly soybeans.

He sees possibilities for improvement in whatever plant he happens to be working with, whether crops on his own farm or sweet corn or gladioluses in his garden in Urbana. Although born at Fiatt, Ill., he was reared on a farm near Perry, Okla., and has always kept close to the soil. His educational and occupational record includes a B.S. degree from Oklahoma Agricultural and Mechanical College in 1910; the M.S. degree from the University of Wisconsin in 1914; the Ph.D. degree from Wisconsin in 1920; assistant in agronomy, South Dakota State College, 1910-12; scientific assistant, U. S. Department of Agriculture, 1912-13; assistant and instructor, Department of Genetics, University of Wisconsin, 1913-19; assistant pathologist, Bureau of Plant Industry, U. S. Department of Agriculture, 1919-20; and through the ranks from assistant professor to professor of plant genetics at the University of Illinois, 1920 to date.

NEW INDIANA YIELD RECORD SET

A record breaking yield of 55 bushels per acre brought George M. Schell, 60-year old Madison County, Ind., farmer, the title of Hoosier soybean champion for 1946.

A record number of 179 growers participated in the contest, by far the largest in its 7-year history. Average yield of all contestants was 36.2, which was slightly under the 36.7 bushel averages of last year's Hoosier contestants. All except 36 of the contestants entered the Lincoln variety. Four contestants produced over 50 bushels per acre.

A recheck of records in the Purdue University agronomy department, headquarters for the soybean yield contest, showed the best 2 acres of Schell's 10-acre field topped the best previous yield in the contest which was 51.9 bushels per acre produced by Eugene Gwaltney, Delaware County, in 1945.

Schell's record yield came from Lincoln soybeans. The beans, planted in rows 40 inches apart at the rate of 1 bushel of seed per acre, were combined and contained when harvested 9.9 percent moisture.

The seed was planted with a corn planter and fertilized in the row with 200 pounds of fertilizer per acre in addition to a heavy

application of manure, following corn last year.

Besides the soybean championship Schell is also winner of a gold medal in the 5-acre corn contest with a yield of 100.6 bushels per acre.

Runner-up in the soybean contest was Melvin Francis, Clay County farmer, who produced 53 bushels per acre in a selected 2-acre area of a 90-acre field. Francis also used Lincoln seed. His crop, however, was drilled solid at the rate of 2 bushels of seed per acre.

Other yield contestants with yields of 50 bushels or over were: George A. Holder, Benton County, 51.1; and M. L. Anderson, Shelby County, 51.7.

Other contestants who produced more than 30 bushels per acre were awarded gold medals by the Indiana Corn Growers' Association. Schell was honored along with other crop champions of the state at the annual banquet of the association at the university Jan. 2 which was held in connection with the Agricultural Conference.

—s b d—

The first official estimate places the Indian sesame-seed acreage for 1946-47 at 1,430,000 acres, compared with 1,509,000.

OIL & SOAP HAS CHANGED NAME

As of the January 1947 issue the name *Oil & Soap* will be changed to *Journal of the American Oil Chemists' Society*, according to an announcement in the December issue. This will make the fourth name of the publication, which began in 1917 as the chemists' section of the *Cotton Oil Press*.

The journal has been published by the Society with its own editorial staff since November 1941. Members of the Society comprise about half of the total number of subscribers.

Publication of the new edition of the *Official Methods of Analysis of the American Oil Chemists' Society* is also announced. The format is entirely new, with new illustrations and a format larger than the old edition.

Technical articles in the December issue included the following:

Evaluation of Tests for Rancidity in Edible Packaged Oils, by John E. W. McConnell and W. B. Esselen, Jr., Massachusetts State College, Amherst.

The Role of Proteins in Animal Nutrition, by H. C. Schaefer, Ralston Purina Co.

Flavor Reversion in Soybean Oil. III. The Preparation and Flavor Characteristics of a Simulated Soybean Oil, by Calvin Gumbic, A. I. Schepartz, and D. F. Daubert, University of Pittsburgh.

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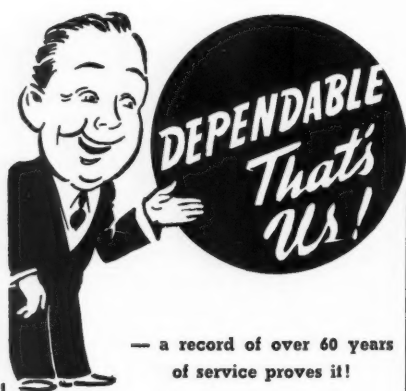


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197 MILLION BUSHEL IN '46

Soybean production reached an all time high in 1946. The crop this year is estimated at 197 million bushels, about 2½ percent higher than the 192 million bushels produced in 1945 and almost double the 10-year average production, reports U. S. Department of Agriculture in its annual crop summary issued in December.



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The record crop was produced despite the smallest acreage harvested for beans since 1941. The yield of 20.5 bushels per acre this year is the second highest of record, exceeded only by the 20.9 bushel yield in 1939. Last year the yield was 18.0 bushels per acre, the same as the 10-year average.

The 11½ million acres of soybeans (grown alone for all purposes) in 1946 was about 12 percent below last year while the acreage interplanted with other crops—grown mostly in the Southern states—declined only slightly from a year ago. However, the small decrease continued the downward trend of the interplanted acreage which is now at the lowest level in a decade. The resulting total acreage grown for all purposes, 12.3 million acres, is 11 percent below 1945 and the lowest since 1941.

About 78 percent of the total acreage was harvested for beans this year, the highest proportion of record, exceeding the previous high mark of 77 percent harvested for beans in 1945. Of the 9.6 million acres harvested for beans in 1946, about 90 percent or 8.6 million acres were in the North Central states.

The season from planting time through harvest was favorable for soybeans. Above average yields were produced in all areas with record yields reported in many states.

Planting was accomplished with little de-

lay except in a few localities, principally in Ohio, where excessive rains resulted in some late planted acreage. Dry weather lowered yields in an area of northern Ohio, northern Indiana, southern Michigan and southern Wisconsin. However, only Ohio and Wisconsin had below average state yields.

Illinois, the heaviest producing state, came through with a near-record yield although there was slight damage from dry weather in the northern part of the state and some disease loss largely from brown rot and blight. The West North Central and the South Central states had an exceptionally good season with bumper yields harvested in most of these states. *Of the major producing states Minnesota, Iowa, Missouri and Arkansas each made record yields.*

Killing frosts in most areas held off long beyond the usual date. This enabled the late planted acreage to reach maturity. Harvesting proceeded rapidly during most of October until rains caused some delay. Later favorable weather gave ample time for combining the remaining acreage. The crop was practically all harvested before the middle of December with very little loss. The excellent maturing and harvesting season resulted in a high quality crop of low moisture content.

— s b d —

Canada harvested a crop of 1,072,000 bushels of soybeans in 1946, the largest on record. The entire acreage of 59,200 was concentrated in southern Ontario as Manitoba, the only other province producing soybeans on a commercial scale in 1945, appears to have abandoned this crop.

SOYBEANS FOR BEANS

State	Acreage harvested *			Yield per acre			Production		
	Average 1935-44	1945	1946	Average 1935-44	1945	1946	Average 1935-44	1945	1946
	—Thousand acres—			—Bushels—			—Thousand Bushels—		
New York	10	4	8	14.5	14.0	16.0	152	56	128
New Jersey	†10	9	9	†14.0	19.0	19.0	†144	171	171
Pennsylvania ..	17	23	21	15.7	15.0	16.0	260	345	336
Ohio	619	1,077	903	19.2	18.0	18.0	11,999	19,386	16,254
Indiana	796	1,466	1,334	17.2	19.5	19.0	13,973	28,587	25,346
Illinois	2,194	3,760	3,193	20.3	20.0	23.5	44,921	75,200	75,036
Michigan	67	122	86	14.8	17.5	15.0	988	2,135	1,290
Wisconsin	26	37	33	14.4	15.0	12.5	390	555	412
Minnesota	98	452	610	14.6	14.5	17.5	1,424	6,554	10,675
Iowa	907	1,910	1,520	18.7	18.5	23.0	17,448	35,335	34,960
Missouri	233	720	718	12.2	13.0	20.0	3,380	9,360	14,360
North Dakota ..	...	5	6	...	11.5	11.0	...	58	66
South Dakota ..	†11	13	19	†12.8	14.0	14.5	†136	182	276
Nebraska	†25	17	23	†12.5	18.0	21.0	†320	306	483
Kansas	78	235	198	9.8	10.0	11.0	933	2,350	2,178
Delaware	27	33	33	12.6	14.0	15.5	331	462	512
Maryland	20	31	32	13.1	15.0	14.0	266	465	448
Virginia	55	79	67	13.6	16.0	16.5	746	1,264	1,106
West Virginia ..	2	1	1	12.0	13.0	13.5	18	13	14
North Carolina ..	179	216	212	11.4	12.5	13.5	2,010	2,700	2,862
South Carolina ..	10	8	16	6.9	7.0	8.0	71	56	128
Georgia	13	6	9	6.2	7.5	7.0	81	45	63
Kentucky	36	60	87	11.9	16.0	18.0	444	960	1,566
Tennessee	35	49	45	9.4	14.5	18.0	394	710	810
Alabama	22	27	25	5.9	11.0	14.0	126	297	350
Mississippi	71	62	70	10.0	13.0	15.0	815	806	1,050
Arkansas	115	209	295	12.4	16.0	18.5	1,484	3,344	5,458
Louisiana	25	23	27	12.4	14.0	13.0	306	322	351
Oklahoma	4	7	6	7.1	7.5	6.0	26	52	36
Texas	7	.....	.....	8.4	...	...	58	.....	.....
United States ..	5,698	10,661	9,606	18.0	18.0	20.5	103,457	192,076	196,725

* Equivalent solid acreage. (Acreage grown alone, with an allowance for acreage grown with other crops)

† Short-time average.



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Publications

Analytical Handbook

HANDBOOK OF ANALYTICAL METHODS FOR SOYBEANS AND SOYBEAN PRODUCTS. Technical Committee, National Soybean Processors Association, 3818 Board of Trade Bldg., Chicago. 40 pages, \$1.00.

For the first time methods for the analyses of soybeans and their products are brought together under one cover. Official methods of the American Oil Chemists Society, Association of Official Agricultural Chemists, and the National Soybean Processors Association are included. However, it is pointed out that the collection as such does not constitute the official methods of any association or society, and should be used with this fact in mind.

Analytical methods are included for the following:

Moisture and volatile matter in whole soybeans; moisture and volatile matter in ground soybeans, soybean oil, meal and flour; oil in soybeans; oil in soybean oil meal and soy flour; protein in soybeans, soybean oil meal and soy flour; crude fiber in soybeans, soybean oil meal and soy flour; ash in soybeans, soybean oil meal and soy flour; screen test of soy flour.

Water absorption of soy flour; lecithin in soy flour; free fatty acids in soybean oil; insoluble impurities in soybean oil; break test for crude soybean oil; grading soybean oil for color; bleach test for refined soybean oil; color of soybean oil; refining loss of crude soybean oil.

Moisture and volatile matter in soybean oil; (hot-plate and vacuum oven methods); acetone insoluble matter in lecithin; acid value of lecithin; total phosphorus in lecithin; kerosene insoluble matter in lecithin; and moisture in lecithin.

This would seem to be an indispensable book for the laboratory.

Diseases

COPPER DUSTS CONTROL BACTERIAL PUSTULE. *Research and Farming*, 1945. North Carolina Agricultural Experiment Station, Raleigh, N. C.

Only dusts containing copper reduced bacterial pustule in tests on soybeans at the North Carolina station in 1945. By the middle of the summer one could readily pick out the rows treated with copper dust by the better appearance of the plants due to greater freedom from disease.

Dust preparations used were: copper-clay containing 7 percent metallic copper; copper-talc containing 7 percent copper; 20 percent feramate in talc; 20 percent zerate in talc; 325-mesh sulphur; 10 percent feramate in sulphur; and 5 percent DDT in sulphur. Six applications of each dust were made.

On control rows not dusted, less than 5 percent of leaves were entirely free of disease. On rows dusted with copper 37 to 74 percent of the leaves were disease free.

Plots dusted with copper yielded 4.9 bushels per acre more than untreated plots. Sulphur dust reduced yields about as much as copper increased them.

There were frequent rains during the period when the dusts were being applied. Supplementary tests indicate that even with the rains five and perhaps four applications of copper dust would have been enough to control the disease.

But further tests must be made before definite recommendations can be made as to amount of dust and number of applications.

SOYBEAN DISEASES IN NEW JERSEY. By C. M. Haenseler, *Plant Disease Notes*, New Jersey Agricultural Experiment Station, New Brunswick, N. J.

Soybean diseases are taking a greater toll

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in New Jersey, as elsewhere, than in the past. Soybean mosaic, downy mildew, pod and stem blight and purple seed disease are discussed. The first two are not considered to offer any great threat to soybeans in New Jersey, but pod and stem blight and purple seed disease are taking considerable toll.

PURPLE SEED STAIN CAUSED BY FUNGUS. *Research and Farming*, 1945.

Recent studies of the soybean purple-seed disease in North Carolina show conclusively that it is caused by a parasitic fungus fitting the description of *Cercosporina kikuchii*, which causes a similar disease in the Orient.

The use of seed treatment dusts such as Arasan on purple stained seeds was found to decrease seedling losses.

The fungus causing this disease forms spores abundantly on seedlings grown from purple stained seeds. Infections unrecognized before have been identified on stems, leaves and pods. When heavily infected seeds are planted, there is poor germination, and weak, stunted plants result.

Insects

SUSCEPTIBILITY OF EDIBLE SOYA PRODUCTS IN STORAGE TO ATTACK BY TRIFOLIUM CONFUSUM DUV. By Clarence E. Mickel and John Standish, division of entomology and economic zoology, University of Minnesota. Technical Bulletin 175.

Trifolium confusum Duv., commonly known as the "confused flour beetle," is a well known pest of wheat flour and other cereal products in storage. It infests a great variety of foods and has caused serious damage in grocery stores, warehouses and flour mills.

Little information has been available concerning the extent to which this insect might attack edible soya products. When it became known that soy food products would be shipped abroad in large quantities under a great variety of conditions in all parts of the world, the Soy Flour Association became concerned.

This study was made by the University of Minnesota in cooperation with the Soy Flour Association. Seven types of soy flour and grits were submitted for testing.

From the results it is concluded that the "confused flour beetle" is a much less serious pest of soy flour and grits than of cereals. However, all soy flours and grits may become slightly infested. Some damage may occur when relative humidity in storage is higher than 50 percent. Full-fat soy flour is less likely to be heavily infested than other types.

The rate of larval development is greatly decreased in soy flours and grits, resulting in a prolonged larval period.

Any soy food product when combined with cereals is more likely to be infested

and damaged by the insect than the soy foods in their original processed form.

Protein

PREPARATION AND NITROGEN CONTENT OF SOYBEAN PROTEIN. By William G. Smiley and Allan K. Smith, Northern Regional Research Laboratory, Peoria, in *Cereal Chemistry*, May 1946.

Soybean protein was prepared by various methods from several varieties of soybeans and the nitrogen content determined.

Methods used were:

1. Extraction with water and precipitation with acid.
2. Extraction with dilute alkali and precipitation with acid.
3. Extraction with a salt solution and precipitation by dialysis or dilution.
4. Extraction with water or salt solution, precipitation by saturation with ammonium

sulfate, redispersing in water, and precipitation by dialysis.

The variations in nitrogen content between varieties were small compared to the variations due to method of preparation. The highest value obtained for each variety ranged from 16.26 percent for Lincoln to 19.90 percent for Willomi. The nitrogen content obtained at the Laboratory has not been as high as that reported by some other workers.

The variations in nitrogen content caused by the method of preparation are due to varying degrees of removal of a nonprotein impurity.

— s b d —

Contour-farming sloping land in Illinois in 1945 increased production the equivalent of having 13 percent more land in corn and oats and 15 percent more in soybeans and wheat.



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GRITS and FLAKES...

FROM THE WORLD OF SOY

Ralston Purina Co., St. Louis, Mo., has announced purchase of the Continental Grain Co. property which adjoins the Purina plant at Davenport, Iowa. The 300,000-bushel capacity elevator will make it possible for Purina to maintain a longer supply of vital ingredients.

* * * *

Sewall D. Andrews, Jr., has been named vice president of the chemical division of General Mills, Inc., in charge of sales. Since his discharge from the Army with the rank of lieutenant colonel in December 1945, Andrews has been director of sales for General Mills' chemical division.

* * * *

Book No. 2085, "Why Link-Belt Engineers Created the Electrofluid Drive Packaged Power Unit for You," has been issued by Link-Belt Co., 307 N. Michigan Ave., Chicago 1, Ill.

* * * *

"The Road Ahead for Agriculture" is subject for the ninth annual Farm Institute to be held at Hotel Fort Des Moines, Des Moines, Iowa, February 14 and 15.

* * * *

Link-Belt Co., Chicago, manufacturers of materials handling and mechanical power transmission machinery, announce the opening of a sales office in Milwaukee, Wis. William M. Hufnagel, district sales manager, is in charge of the new office.

* * * *

John O. Frahm, Bemis Bro. Bag Co. sales representative at Oklahoma City for the past several years, has been transferred to the Kansas City division of the Bemis organization. His headquarters will be in Wichita, Kans.

* * * *

Consumer Cooperative Association's processing plant at Coffeyville, Kans., processed one-half million bushels of soybeans during its first year's operation, the company reports.

* * * *

Bernie W. Freudenberg, formerly of Fort Wayne, Ind., has joined the feed and soy division of Pillsbury Mills, as special field sales promotion man for rabbit and dog feeds.

* * * *

Harold A. Miller, president of the Louisville Soy Products Co., Louisville, Ky., has announced plans to increase plant capacity from 75 to 100 tons daily. New equipment will cost about \$30,000.

* * * *

Central Retail Feed Association will hold its 1947 convention June 2-3 at the Schroeder Hotel, Milwaukee, Wis. The Central convention is considered the nation's largest meeting of the feed trade. Registrations at the 1946 sessions totaled nearly 1,100.

* * * *

Expansion of plant facilities of Farm Bureau Cooperative Association, Columbus, Ohio, the past 2 years has included a soybean processing plant at Springfield, Ohio, and an oil refinery at Louisville, Ky.

* * * *

A process for canning soybeans which will keep them in a palatable condition for a long time has been patented by A. A. Levinson, B. T. Malter and P. L. Julian and assigned to the Glidden Co., Cleveland.

* * * *

Mente & Co., Savannah, producer of burlap bags, is leading a fight being conducted through American Plant Food Council to bring State Department pressure on India to ship more burlap to this country. Much Indian burlap is now being sent to Argentina in exchange for corn.

* * * *

E. H. (Buddy) Tenent, Jr., son of E. H. Tenent of Woodson-Tenent Laboratories, has become associated with the firm at Memphis, Tenn., following his release from service with the occupational forces in Japan.

* * * *

Bemis Bro. Bag Co. is distributing a large wall calendar which features in large photos 12 different operations in the manufacture of bags. Copies are available from any of the 34 offices of the Bemis Co.

* * * *

An annual soybean achievement program and dinner is being held at Mexico, Mo., February 7. Included will be a tour of the M.F.A. Soybean Mill, noon dinner and afternoon program.

* * * *

Revision of the executive setup of Spencer Kellogg & Sons, Inc., has been accomplished with the election of Howard Kellogg, Sr., to the new position of chairman of the board. His son, Howard Kellogg, Jr., was elevated to the position of president vacated by his father.

PRINT BAG ORIGINATOR



Richard Peek, vice president of the Percy Kent Bag Co., Kansas City, was featured in an article in the November issue of CORONET, on how "Sackcloth Goes High-Style." Peek is credited with starting the print goods bag business which has furnished dress material for country women all over the U. S.

— s b d —

STALEY SHIPS SOY FLOUR TO BRITAIN

Sale of 2,900,000 pounds of soy flour to the British Ministry of Foods was announced by A. E. Staley Manufacturing Co., Decatur, Ill. The shipment left New York January 7 on the "S.S. Fort Miami."

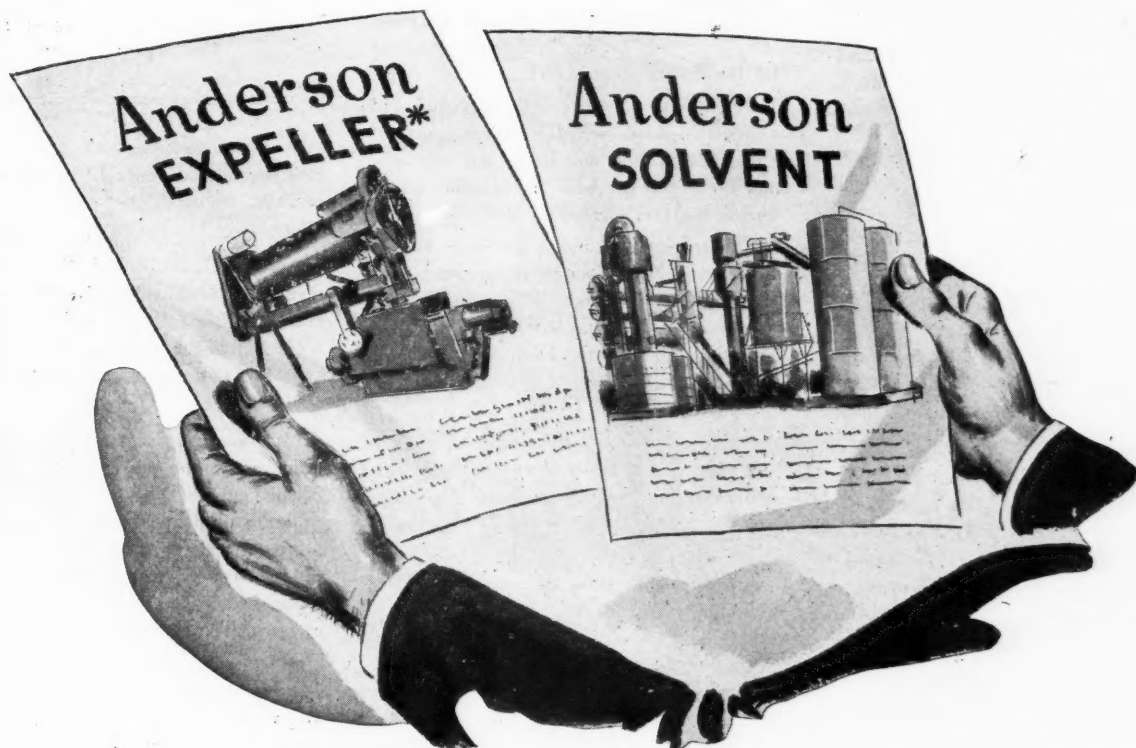
The full fat grade of soy flour shipped contains 20 to 22 percent oil fat.

During World War II, Staley's sold soy flour to UNRRA for distribution throughout Europe after having, in the earlier days of the war, made extensive shipments of Lend-Lease soy flour to Great Britain and Russia.

China, Greece, Italy, Poland, Austria, Yugoslavia and Czechoslovakia were the principal recipients of soy flour from UNRRA during the first nine months of 1946, when UNRRA shipped 170 million pounds of it from the United States. Data on shipments during the last 3 months of the life of UNRRA are not yet available.

Russia has not obtained any soy flour from the United States since the war ended, apparently getting her supply from Manchuria, most of which she occupied until recently. Several European countries in the non-Russian sphere of influence recently have received shipments of soybeans, presumably from Manchuria.

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WASHINGTON Digest

Export Markets Low-protein feeds primarily of vegetable origin with a crude protein content of 25 percent or less—except for oil cakes and meals—may now be exported in any amounts to Western Hemisphere countries and the Philippines.

This action by Department of Agriculture is expected to restore about the prewar export movement of these types of feeds (mostly commercially mixed and wheat by-product feeds) of around 50,000 to 60,000 tons annually.

High-protein, and certain low-protein feeds are being continued under export allocation to all countries, despite the requests of some crushers to open up the export market.

Export of marine byproduct feeds is prohibited to any country. Oil cakes and meals, and byproduct feeds of animal origin, may be exported only as authorized by USDA allocations. Volume of these exports so far has been negligible.

USDA officials admit the export market probably would take considerable amounts of domestic oilseed cake and meals at prices higher than the domestic market.

They also acknowledge the market for protein feeds has slowed up in some parts of the country, but they consider this temporary. Moreover, they maintain there isn't enough transportation to handle any sizeable movement of feed products overseas, since all the cars that can be obtained are needed for export of relief wheat.

Imports Increase The United States will be on a net import fats and oils basis in the first quarter of this year for the first time since 1942.

Department of Agriculture has approved a recommended schedule for import of about 240 million pounds of fats and oils, and for export of about 138 million pounds during the first quarter of 1947.

The schedule is based on International Emergency Food Council recommendations for international distribution of fats and oils during the first quarter. IEFC will recommend international distribution of fats and oils later on for subsequent periods of the year.

Under the new schedule, exports will consist mainly of lard, soybean oil, shortening, margarine, and soap, with small quantities of some other fats and oils.

Imports will consist mainly of copra, linseed oil, castor beans, and small quantities of tung, rapeseed, and a few other oils. USDA is negotiating with Belgium for about 65 million pounds of palm oil in exchange for an equal volume of domestic oils to meet U. S. needs for food packaging.

Revise Tariffs Soybeans and soybean oil are up for consideration and possible inclusion in the new reciprocal trade agreement program the Department of State hopes to have ready by next summer.

Cottonseed oil and linseed oil also are being considered for inclusion. These com-

By PORTER M. HEDGE
Washington Correspondent for
The Soybean Digest

modities now are covered by the Tariff Act of 1930.

The present trade agreement program expires next June 18. U. S. is taking the lead in a worldwide drive to lower tariff rates, and has authority under Trade Agreement Act to cut tariffs as much as 50 percent below the rates in effect January 1, 1945.

Any new reciprocal trade agreement program has to be approved by Congress to become effective. Hearings on the proposed program are now being held before the Committee for Reciprocity Information (starting January 13) to give interested commodity groups a chance to state their case for or against.

Republicans voted almost solidly against reciprocal trade agreements in 1934, 1937, and 1940. In 1943, with the war on, a majority of the GOP approved extension of the program.

Now, however, a hot fight over proposals to lower tariffs any further is expected to break out after Congress gets organized, both from GOP and industry quarters.

Price Drop in 1947? The first real postwar drop in agricultural prices—comparable to the 1921 depression following World War I—is due to hit in late 1947 and early 1948.

This is the view of Department of Agriculture experts upon whom policy makers are relying for guidance in drafting short-term farm policies and programs.

As these officials see it, farm prices will turn down with the 1947 harvests, but the critical month will be December, 1947, when the livestock runs are heaviest.

The farm price recession is expected to run well into 1948, but to reach bottom in that year. Then prices are expected to "firm up" in 1949, with the parity index, which determines the parity price level for farm products, evening off at about 170 percent of 1909-14.

On livestock, particularly cattle, USDA officials recommend culling during the March-September period. On crops, assuming normal yields, they recommend early marketings to avoid expected later price declines.



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Supports End in '48

President Truman's proclamation officially ending World War II hostilities means that 2 years from now you are on your own as far as farm prices are concerned—unless Congress adopts new price support legislation.

After December 31, 1948, there will be no government price supports except on the six "basic" commodities—corn, wheat, cotton, rice, tobacco and peanuts.

On these commodities, price supports will fall back on the formula provided for in the AAA Act of 1938. This provides for crop loans ranging from 52 to 75 percent of parity, instead of the present 90 percent of parity price guarantees.

There will be no price supports under soybeans and other oilseed crops 2 years from now, unless Congress authorizes new legislation.

—s b d—

COOKED SOYBEANS LOSE VITAMIN C

The vitamin content of green soybeans is affected by quick freezing and cooking in the same way as peas, according to recent reports in the New York State Agricultural Experiment Station, Geneva, N. Y.

Processing, frozen storage and cooking resulted in a 48 percent loss of vitamin C in green soybeans. Thiamine and carotene values of the processed soybeans were also about the same as for peas.

However, it was found that sprouted soybeans lost more vitamin C in processing and cooking, to the extent of about 70 percent of their original content.

Market Street

We invite the readers of THE SOYBEAN DIGEST to use "MARKET STREET" for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here.

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FIND NEW VITAMIN E FACTOR IN SOY OIL

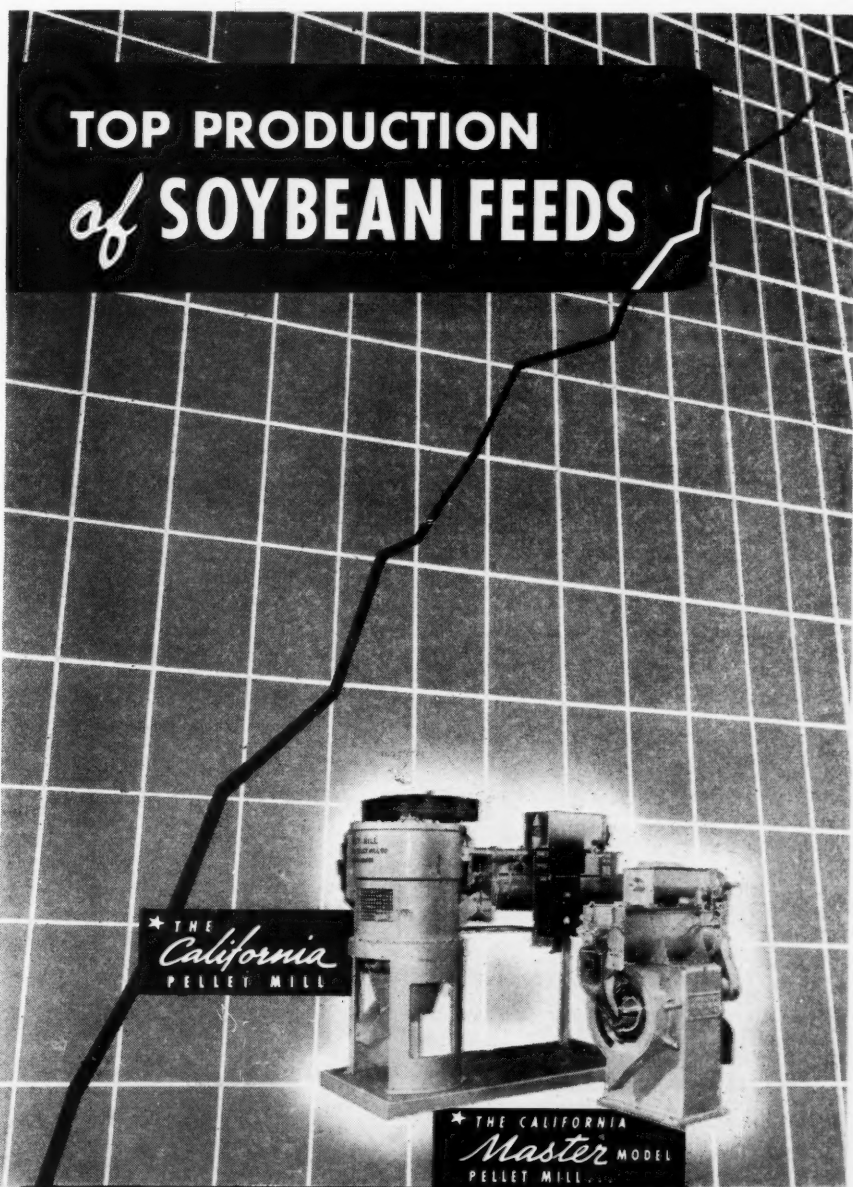
A new vitamin E factor called delta tocopherol, which is expected to find wide use as a food preservative, has been isolated from soybean oil, report Drs. Charles D. Robinson, Max H. Stern, Leonard Weisler and James G. Baxter of Distillation Products, Inc., Rochester, N. Y. Delta tocopherol is an effective antioxidant for vitamins and fats, indicating its value in preventing deterioration of such foodstuffs as lard and shortenings.

The newly discovered substance is one of a group of compounds, known to chemists

as tocopherols, which collectively form the vitamin E complex. The previously isolated members of the group are called alpha, beta and gamma tocopherols. They occur naturally in some vegetables, such as lettuce, and in vegetable oils, notably cottonseed oil. Delta tocopherol was first isolated from soybean oil, in which it occurs abundantly, but it is known to be present in wheat germ, cottonseed and peanut oils.

Vitamin E, once known as the fertility vitamin because lack of it in the diet causes sterility in rats, has since been found to be essential in maintaining a healthy condition of the muscles.

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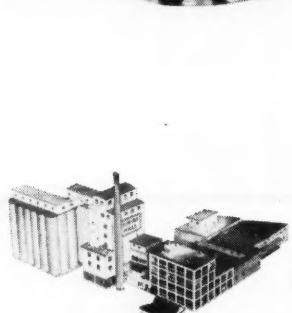


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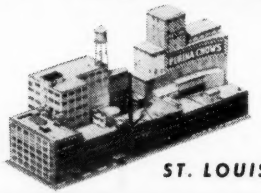
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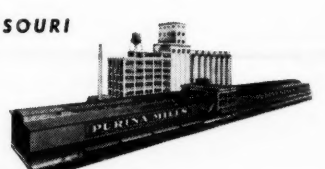
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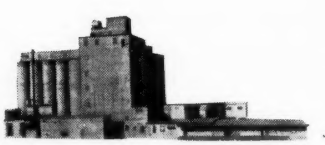
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SOYBEANS, OIL AND MEAL MARKETS ALL STRONGER

Soybeans, oil and meal markets were all stronger at the end of December after sagging the fore part of the month.

Trading in beans was largely nominal. Comparatively few spot cash sales were reported on the Chicago market during the month.

The price for beans continued to drop during the first 2 weeks in December. The low point was December 11, with \$2.80 being bid for No. 2 yellow in Chicago on a 10-day delivery basis.

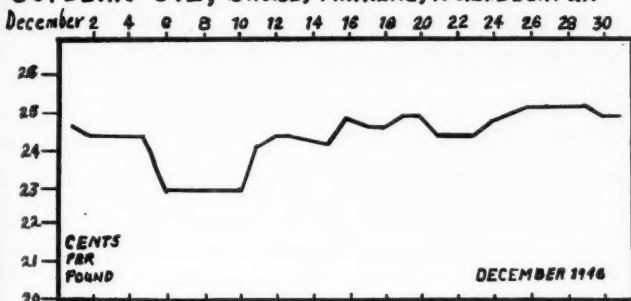
But by the middle of the month the market had strengthened due to a scarcity of offerings. Bids of \$3.10 were being offered at month's end.

Prices for oil meal slumped \$5 to \$7 a ton the first week in December. The month's low was December 11, with bulk meal being quoted at \$69 Decatur basis. But the arrival of colder weather and rumors of export allocations put some backbone in the market.

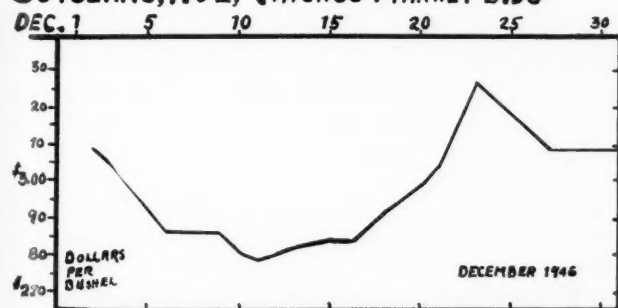
The meal market showed more firmness during the last half of the month. January shipments of soybean oil meal were being quoted at \$70 to \$72; February and March \$68; and April forward at \$65.

Virtually everyone in the trade was of the opinion that increased buying will develop early in 1947. This will be helped by the prac-

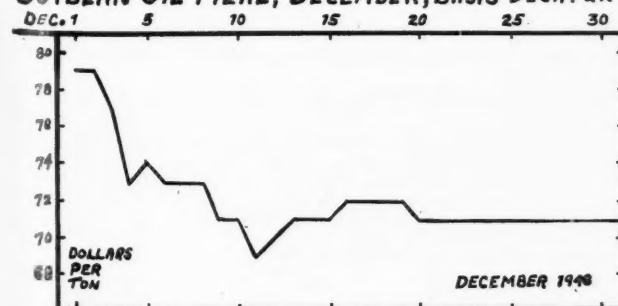
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SOYBEAN OIL MEAL, DECEMBER, BASIS DECATUR



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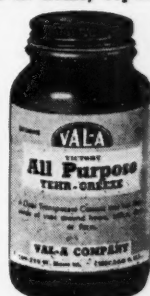
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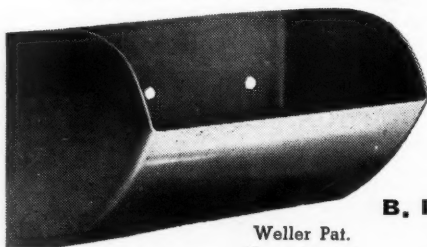
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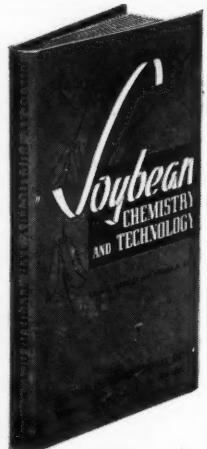


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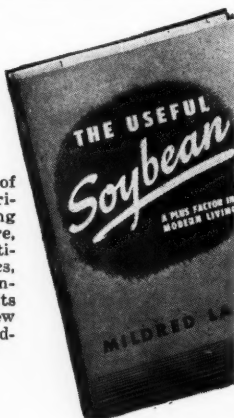
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tice of holding light inventories. Some crushers report being sold out through March.

Crude soybean oil hit a low of 23c for the month on the 11th. But by the 13th the market was showing more firmness with heavier trading, particularly in April through August deliveries.

Factors which bolstered the oil market were reported scarcity of substitutes for soybean oil, which were selling at higher prices, and a government report showing heavier consumption than expected of cottonseed oil in November.

Also, the drying industry was offering a market for fair quantities of soybean oil. It is being blended with Chinawood oil as a substitute for linseed oil.

At the end of the month oil for December-January delivery was being quoted at 25c a pound; for February delivery 24c; April-June delivery 22c; and July-September delivery 21c.

● **SOYBEAN INSPECTIONS.** Inspected receipts of soybeans dropped sharply in November to a total of 16,700 cars compared with 32,278 cars in October, according to inspectors' reports to the grain branch of the Production and Marketing Administration. November inspections brought the total for the first two months of the season to 48,978 cars compared with 54,271 cars for the same months of 1945.

The quality of the soybeans inspected in November was lower than for the preceding month, only 63 percent grading No. 2 or better compared with 77 percent in October. October-November inspections show the quality of this season's crop considerably below the exceptionally good 1945 crop, with 73 percent grading No. 2 or better compared with 93 percent for the same period in 1945.

Inspections of soybeans in November included the equivalent of 493 cars inspected as cargo lots and truck receipts equivalent to about 300 cars.

● **FATS AND OILS DISTRIBUTION JANUARY-MARCH.** The U. S. Department of Agriculture announced that the United States expects to schedule for import approximately 240 million pounds of fats and oils and to schedule for export approximately 138 million pounds of fats and oils during the first quarter of 1947. This is on the basis of the International Emergency Food Council recommendations for the international distribution of fats and oils during the first quarter of 1947. This is the first time since 1942 that the United States will be on a net import rather than a net export basis.

Exports of fats and oils from the United States contemplated under this program would consist principally of lard, soybean oil, shortening, margarine and soap together with relatively small quantities of other fat and oil commodities. Imports into the United States would consist principally of copra (for crushing into coconut oil), linseed, oil, castor beans and oil and smaller quantities of tung, rapeseed and other oils.

● **COMMERCIAL SOYBEAN STOCKS.** Production and Marketing Administration's commercial grain stock reports for December.

U. S. Soybeans in Store and Afloat at Domestic Markets (1,000 bu.)

	Dec. 10	Dec. 17	Dec. 24	Dec. 31
Atlantic Coast	717	745	663	662
Gulf Coast	119	326	94	106
Northwestern and				
Upper Lake	3,154	3,226	3,159	3,177
Lower Lake	8,578	8,312	6,596	8,282
East Central	6,915	6,489	6,788	5,694
West Central				
Southwestern & Western	3,998	3,912	3,657	3,613
Total current week	23,481	23,010	20,957	21,534
Total Year ago	25,052	23,910	24,813	24,423

U. S. Bonded Soybeans in Store & Afloat at Canadian Markets

	Dec. 10	Dec. 17	Dec. 24	Dec. 31
Total current week	115			115
Total Year ago	79	79	79	79

● **STANDARD SHORTENING SHIPMENTS.** By members of Institute of Shortening Mfrs., in pounds.

	Dec. 7	Dec. 14	Dec. 21	Dec. 28
December 7	10,663,350			
December 14	9,775,147			
December 21	7,262,768			
December 28	5,060,001			